

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (currently amended) A base transceiver station for use in communication with a plurality of radio mobile station apparatuses based on code division multiple access, comprising a reception signal interference canceller device,

the interference canceller device comprising:

a slot configuration circuit for dividing a reception signal at certain time intervals, such that one of the divided signals partially overlaps another divided signal at a signal dividing point, converting the divided signal into signals at a faster cycle and converting into a signal having a serial slot configuration as many the converted signals as stages for stage processing on a signal identical to the converted signals at a faster cycle;

a correlation circuit for performing a despreaditig process on the signal having the slot configuration;

a stage addition circuit for adding the number of stages for stage processing to the despread signals;

a re-spreading circuit for performing a re-spreading process on the signals which have been subjected to the stage addition;

a synthesis circuit for performing a process of synthesizing all of the spread

signals which have been subjected to the re-spreading process to generate replica signals;
and

a subtraction process circuit for performing a subtraction process between the
replica signals and the reception signals,

wherein signals obtained by subtraction process for the replica signals and the
reception signals are repeatedly fed back to the correlation circuit thereby to eliminate an
interference component.

2. (cancelled without prejudice)

3. (currently amended) A base transceiver station [according to Claim 1,
wherein among the signals having a serial slot configuration, with respect to the slot
signal to be despread:

before being inputted to the correlation circuit,] for use in communication with a
plurality of radio mobile station apparatuses based on code division multiple access,
comprising a reception signal interference canceller device,

the interference canceller device comprising:

a slot configuration circuit for dividing a reception signal at certain time
intervals, converting the divided signal into signals at a faster cycle and converting into a
signal having a serial slot configuration as many the converted signals as stages for stage
processing on a signal identical to the converted signals at a faster cycle, and wherein
only a first slot thereof is allowed to pass through and the rest of the slots is disallowed to
pass; and

the signal whose second slot and subsequent slots are subjected to an interference cancellation process and then fed-back, is inputted into the correlation circuit;

a correlation circuit for performing a despreading process on the signal having the slot configuration;

a stage addition circuit for adding the number of stages for stage processing to the despread signals;

a re-spreading circuit for performing a re-spreading process on the signals which have been subjected to the stage addition;

a synthesis circuit for performing a process of synthesizing all of the spread signals which have been subjected to the re-spreading process to generate replica signals;
and

a subtraction process circuit for performing a subtraction process between the replica signals and the reception signals,

wherein signals obtained by subtraction process for the replica signals and the reception signals are repeatedly fed back to the correlation circuit thereby to eliminate an interference component.

4. (currently amended) A base transceiver station [according to Claim 1, wherein the stage addition circuit] for use in communication with a plurality of radio mobile station apparatuses based on code division multiple access, comprising a reception signal interference canceller device,

the interference canceller device comprising:

a slot configuration circuit for dividing a reception signal at certain time intervals, converting the divided signal into signals at a faster cycle and converting into a signal having a serial slot configuration as many the converted signals as stages for stage processing on a signal identical to the converted signals at a faster cycle;

a correlation circuit for performing a despreading process on the signal having the slot configuration;

a stage addition circuit for adding the number of stages for stage processing to the despread signals and for selecting[s] valid signals out of the despread signals inputted thereto, selecting[s] signals to be added, and selecting[s] signals to be re-spread and further selecting[s] the despread signals for controlling selections thereof and adding;

a re-spreading circuit for performing a re-spreading process on the signals which have been subjected to the stage addition;

a synthesis circuit for performing a process of synthesizing all of the spread signals which have been subjected to the re-spreading process to generate replica signals;
and

a subtraction process circuit for performing a subtraction process between the replica signals and the reception signals,

wherein signals obtained by subtraction process for the replica signals and the reception signals are repeatedly fed back to the correlation circuit thereby to eliminate an interference component.

5. (currently amended) A base transceiver station [according to Claim 1,
wherein:

the correlation circuit comprises] for use in communication with a plurality of radio mobile station apparatuses based on code division multiple access, comprising a reception signal interference canceller device,

the interference canceller device comprising:

a slot configuration circuit for dividing a reception signal at certain time intervals, converting the divided signal into signals at a faster cycle and converting into a signal having a serial slot configuration as many the converted signals as stages for stage processing on a signal identical to the converted signals at a faster cycle;

a correlation circuit for performing a despreading process on the signal having the slot configuration and having a shift register, despread code setting elements and a matched filter having an addition circuit; and in correlation detection for outputting a correlation-value signal by sequentially shifting the reception signals inputted to the shift register to the subsequent stages, and meanwhile integrating with the despread code setting elements, and adding the integrated signals, the matched filter conducts correlation-detection by switching despread codes set in the despread code setting element within the period during which the signals in the shift register are shifted to the subsequent stages, and performs a despreading process for a plurality of users;

a stage addition circuit for adding the number of stages for stage processing to the despread signals;

a re-spreading circuit for performing a re-spreading process on the signals which have been subjected to the stage addition;

a synthesis circuit for performing a process of synthesizing all of the spread signals which have been subjected to the re-spreading process to generate replica signals;

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Amendment dated June 24, 2004
Reply to Office Action dated April 2, 2004

and

a subtraction process circuit for performing a subtraction process between the replica signals and the reception signals,

wherein signals obtained by subtraction process for the replica signals and the reception signals are repeatedly fed back to the correlation circuit thereby to eliminate an interference component.

6-7. (cancelled without prejudice).